



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTIETH MEETING

Montréal, 24 October to 4 November 2005

Agenda Item 2: Development of recommendations for amendments to the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284) for incorporation in the 2007-2008 Edition

**DRAFT AMENDMENTS TO THE TECHNICAL INSTRUCTIONS TO
ALIGN TO THE UN RECOMMENDATIONS — PART 5**

(Presented by the Secretary)

SUMMARY

Below are the draft amendments to Part 5, Chapters 1 to 4 to reflect the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and the Globally Harmonized System of Classification of Labelling of Chemicals at the second session (Geneva, 10 December 2004) and as modified by the decisions of WG/04 and WG/05.

Chapter 1

GENERAL

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1.2 GENERAL PROVISIONS FOR CLASS 7

1.2.1 Requirements before shipments

1.2.1.2 Each shipment

Before each shipment of any package, the following requirements must be fulfilled:

- a) For any package it must be ensured that all the requirements specified in the relevant provisions of these Instructions have been satisfied;

- b) It must be ensured that lifting attachments which do not meet the requirements of 6;7.1.2 have been removed or otherwise rendered incapable of being used for lifting the package, in accordance with 6;7.1.3;
- c) For each package requiring competent authority approval ~~Type B(U), Type B(M) and Type C package~~ and for each package containing fissile material, it must be ensured that all the requirements specified in the approval certificates have been satisfied;

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1.2.2 Approval of shipments and notification

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1.2.2.2 Shipment approvals

Multilateral approval must be required for:

- a) The shipment of Type B(M) packages not conforming with the requirements of 6;7.6.5;
- b) The shipment of Type B(M) packages containing radioactive material with an activity greater than 3000 A₁ or 3000 A₂, as appropriate, or 1000 TBq, whichever is the lower;
- c) The shipment of packages containing fissile materials if the sum of the criticality safety indexes of the packages in a single freight container [or in an aircraft] exceeds 50; and

except that a competent authority may authorize transport into or through its country without shipment approval, by a specific provision in its design approval (see 1.2.3.1).

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1.2.2.4 Notifications

Notification to competent authorities is required as follows:

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- d) The consignment notification must include:
 - i) sufficient information to enable the identification of the package or packages including all applicable certificate numbers and identification marks;
 - ii) information on the date of shipment, the expected date of arrival and proposed routing;
 - iii) the names of the radioactive material or nuclides;

- iv) descriptions of the physical and chemical forms of the radioactive material, or whether it is special form radioactive material or low dispersible radioactive material; and
- v) the maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with an appropriate SI prefix symbol (see 1;3.2). For fissile material, the mass of fissile material in units of grams (g), or multiples thereof, may be used in place of activity.

Chapter 2

PACKAGE MARKINGS

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2.1 THE REQUIREMENT TO MARK

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2.4.5 Special marking requirements for radioactive material

2.4.5.1

- a) Each package of gross mass exceeding 50 kg must have its permissible gross mass legibly and durably marked on the outside of the packaging;
- b) Each package which conforms to:
 - i) a Type IP-1 package, a Type IP-2 package or a Type IP-3 package design must be legibly and durably marked on the outside of the packaging with “TYPE IP-1”, “TYPE IP-2” or “TYPE IP-3” as appropriate;
 - ii) a Type A package design must be legibly and durably marked on the outside of the packaging with “TYPE A”;
 - iii) a Type IP-2 package, a Type IP-3 package or a Type A package design must be legibly and durably marked on the outside of the packaging with the international vehicle registration code (VRI Code) of the country of origin of design and either the name of the manufacturers, or other identification of the packaging specified by the competent authority of the country of origin of design.

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2.4.5.2 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned, marking must be in accordance with the certificate of the country of origin of the design.

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2.4.9 Special marking provisions for environmentally hazardous substances

2.4.9.1 Packages containing environmentally hazardous substances meeting the criteria of 2.9.3 of the UN Recommendations (UN Nos. 3077 and 3082) must be durably marked with the environmentally hazardous substance mark with the exception of single packagings and combination packagings containing inner packagings with:

- contents of 5 l or less for liquids; or
- contents of 5 kg or less for solids.

2.4.9.2 The environmentally hazardous substance mark must be located adjacent to the markings required by 5;2.1.1. The requirements of 2.2.2 must be met.

2.4.9.3 The environmentally hazardous substance mark must be as shown in Figure 5.2. For packagings, the dimensions must be 100 mm × 100 mm, except in the case of packages of such dimensions that they can only bear smaller marks.

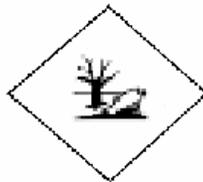


Figure 5-X

Symbol (fish and tree): black on white or suitable contrasting background.

Secretarial Note.— Decision to be taken with regard to renumbering subsequent figures.

2.4.9~~10~~ Marking of overpacks

- a) An overpack must be marked with the word “Overpack”, with the proper shipping name, UN number, “limited quantities” (when applicable), and special handling instructions, ~~and labelled, as required for packages by Chapter 3,~~ for each item of dangerous goods contained in the overpack unless markings and labels representative of all dangerous goods in the overpack are visible.
- b) Where packages containing diagnostic specimens classified as UN 3373 are placed in an overpack, the words ~~“Diagnostic Specimens”~~ “Biological substance, Category B” appearing on the packages within must be clearly visible, or must be reproduced on the outside of the overpack.

Secretarial Note.— DGP-WG04-WP/13 as modified by UN

Chapter 3 LABELLING

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3.1 THE REQUIREMENT TO LABEL

3.1.1 Where articles or substances are specifically listed in the Dangerous Goods List (Table 3-1), a danger class label must be affixed for the hazard shown in column 3 of Table 3-1 and a subsidiary risk label must also be affixed for any risk indicated by a class or division number in column 4 of Table 3-1, unless qualified by a special provision. ~~In certain cases, the need for using a subsidiary risk label may also be indicated by a special provision indicated in column 7 of Table 3-1.~~ However, special provisions indicated in Column 7 may also require a subsidiary risk label where no subsidiary risk is indicated in Column 4 or may exempt from the requirement for a subsidiary risk label where such a risk is indicated in the Dangerous Goods List.

3.1.2 Labels identifying the primary and subsidiary risks of the dangerous goods must bear the class or division number as required in 3.4.1.

3.1.3 All labels must be able to withstand open weather exposure without a substantial reduction in effectiveness.

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3.2 APPLICATION OF LABELS

3.2.1 The labels required to be displayed on packages of dangerous goods are identified in the Dangerous Goods List for articles and substances specifically listed by name and for articles and substances not specifically listed by name which are covered by generic or n.o.s. entries. ~~Labels required on packages within an overpack must be clearly visible in accordance with the provisions of 3.2.7 and 3.2.11 a) or be reproduced on the outside of the overpack such that the provisions of those paragraphs would be met in regard to the locations of the labels on the overpack.~~

Secretarial Note.— DGP-WG05-WP/9.

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3.2.7 Except as provided in 3.4.1.1 d), each label must:

- a) be affixed to a background of contrasting colour or must have a dotted or solid line outer boundary;
- b) be located on the same surface of the package near the proper shipping name marking, if the package dimensions are adequate;
- c) be so placed on the packaging that they are not covered or obscured by any part of or attachment to the packaging or any other label or marking; and

d) when primary and subsidiary risk labels are required, be displayed next to each other.

e) in case of hazard warning labels, be affixed at an angle of 45° (diamond shaped), unless the package dimensions [or size] are inadequate.

Secretarial Note.— DGP-WG/05-WP/39.

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3.3 LABELLING OF OVERPACKS

3.3.1 An overpack must be labelled as required for packages by Chapter 3, for each item of dangerous goods contained in the overpack unless labels representative of all dangerous goods in the overpack are visible.

3.3.2 An overpack containing single packages with end closures containing liquid dangerous goods must be labelled with either the "Package Orientation" label (Figure 5-24), or pre-printed package orientation labels meeting the same specification as either Figure 5-24 or ISO Standard 780-1985, unless such labels are affixed to the package and are visible from the outside of the overpack. Such labels must be affixed to or printed on at least two opposite vertical sides of the overpack with the arrows pointing in the direction required to indicate the orientation of the overpack required to ensure that end closures are upward, notwithstanding that such single packages may also have side closures.

Secretarial Note.— DGP-WG05-WP/9.

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3.4 LABEL SPECIFICATIONS

3.4.1 Class hazard label specifications

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Labelling of radioactive material

h) Each label conforming to Figures 5-16, 5-17 and 5-18 must be completed with the following information:

1) Contents:

- a) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2-12, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO must be shown following the name(s) of the radionuclide(s). The terms "LSA-II", "LSA-III", "SCO-I" and "SCO-II" must be used for this purpose;
- b) for LSA-I material, the term "LSA-I" is all that is necessary; the name of the radionuclide is not necessary;

- 2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol. For fissile material, the mass of fissile material in units of grams (g), or multiples thereof, may be used in place of activity;
 - 3) For overpacks and freight containers the “contents” and “activity” entries on the label must bear the information required in 3.4.1.1 g) 1 A) and B), respectively, totalled together for the entire contents of the overpack or freight container except that on labels for overpacks or freight containers containing mixed loads of packages containing different radionuclides, such entries may read “See Transport Documents”;
 - 4) Transport index: See 2;7.6.1.1 and 2;7.6.1.2. (No transport index entry is required for category I-WHITE.)
- i) Each label conforming to the Figure 5-19 must be completed with the criticality safety index (CSI) as stated in the certificate of approval for special arrangement or the certificate of approval for the package design issued by the competent authority.
 - j) For overpacks and freight containers, the criticality safety index (CSI) on the label must bear the information required in h) above totalled together for the fissile contents of the overpack or freight container.
 - k) In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, labelling must be in accordance with the certificate of the country of origin of design

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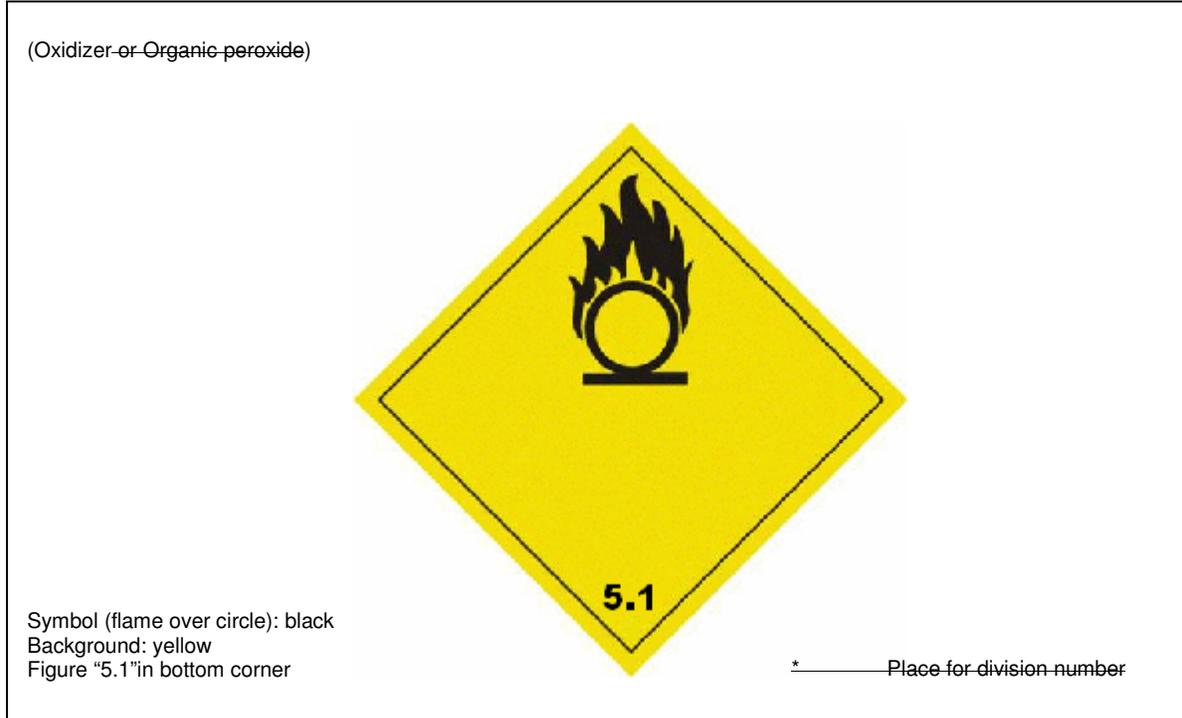


Figure 5-13. Oxidizing substance and organic peroxide, Class 5

Note — It is anticipated that Figure 5-13 in the 2005-2006 edition of the Technical Instructions may continue to be used to denote organic peroxides until 31 December 2010.



Division 5.2
Organic peroxides
Symbol (flame): black or white;
Background: upper half red; lower half yellow;

Figure 5-14. Organic peroxide

Chapter 4

DOCUMENTATION

~~Note 1.— In addition to the provisions of this section, other elements of information may be required by the appropriate national authority or for certain modes of transport (e.g. flashpoint or flashpoint range in C).~~

Note 2.— These Instructions do not preclude the use of electronic data processing (EDP) and electronic data interchange (EDI) transmission techniques as an aid to paper documentation, unless otherwise indicated.

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4.1.4 Information required on the dangerous goods transport document

4.1.4.1 Dangerous goods description

The dangerous goods transport document must contain the following information for each dangerous substance, material or article offered for transport:

- a) the UN number preceded by the letters “UN”;
- b) the proper shipping name, as determined according to 3;1.2; including the technical name enclosed in parenthesis, as applicable (see 3;1.2.7);
- c) the primary hazard class or, when assigned, the division of the goods, including for Class 1 the compatibility group letter. ~~Any assigned subsidiary hazard class or division number(s) must be entered following the numerical hazard class or division and must be enclosed in parenthesis. The words “eClass” or “dDivision” may be included preceding the primary or subsidiary hazard class or division numbers;~~
- d) Subsidiary hazard class or division number(s) corresponding to the subsidiary risk label(s) required to be applied, when assigned, must be entered following the primary hazard class or division and must be enclosed in parenthesis. The words “Class” or “Division” may be included preceding the subsidiary hazard class or division numbers;
- ~~e)~~ where assigned, the packing group for the substance or article which may be preceded by “PG” (e.g. “PG II”).

4.1.4.2 Sequence of the dangerous goods description

4.1.4.2.1 The five elements of dangerous goods description specified in 4.1.4.1 must be shown in the order listed above ~~either in sequence a), b), c), d), or in sequence b), c), a), d), (i.e. (a), (b), (c), (d), (e))~~ with no information interspersed, except as provided in these Instructions. Examples of ~~such permitted a~~ dangerous goods descriptions are:

“UN 1717 Acetyl chloride 3 (8) II” or
UN 1717 Acetyl chloride, Class 3 (Class 8), ~~UN 1717~~, PG II”

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Note 1. — It is intended that from 1 January 2005, the use of the sequence in 4.1.4.2.2 will be deleted.

Note 2.1 — In addition to the requirements of these Instructions, other elements of information may be required by the appropriate national authority or for certain modes of transport (e.g. flash point for sea transport). Unless permitted or required by these Instructions, additional information must be placed after the dangerous goods description.

Note 3.2. — Additional descriptive text in the entries in column 1 of the Dangerous Goods List (Table 3-1) are not part of the proper shipping name but may be used in addition to the proper shipping name.

Note 4.3 — For explosives of Class 1, the basic dangerous goods description may be supplemented by additional descriptive text to indicate commercial or military names.

- e) for chemical kits and first aid kits, the total net quantity of dangerous goods. The net mass of liquids within the kits is to be calculated on a 1 to 1 basis of their volume, i.e. 1 litre equal to 1 kilogram;
- f) for dangerous goods in machinery or apparatus, the individual total quantities of dangerous goods in solid, liquid or gaseous state, contained in the article;

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4.1.5 Information required in addition to the dangerous goods description

In addition to the dangerous goods description the following information must be included after the dangerous goods description on the dangerous goods transport document.

4.1.5.1 Total quantity of dangerous goods

Except for empty uncleaned packagings, the total quantity of dangerous goods covered by the description (by volume or mass as appropriate) of each item of dangerous goods bearing a different proper shipping name, UN number or packing group must be included. For dangerous goods transported in salvage packagings, an estimate of the quantity of dangerous goods must be given. The number and kind (e.g. drum, box, etc.) of packagings packages must also be indicated. UN packaging codes may only be used to supplement the description of the kind of package (e.g. one box (4G)). Abbreviations may be used to specify the unit of measurement for the total quantity.

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4.1.5.7 Radioactive material

4.1.5.7.1 The following information must be included for each consignment of Class 7 material, as applicable, in the order given:

- a) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;
- b) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;
- c) The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with an appropriate SI prefix symbol (see 1;3.2). For fissile material, the mass of fissile material in units of grams (g), or appropriate multiples thereof, may be used in place of activity;

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4.1.5.7.2 The shipper must provide a statement regarding actions, if any, that are required to be taken by the carrier. The statement must be in the languages deemed necessary by the carrier or the authorities concerned, and must include at least the following points:

- a) Supplementary requirements for loading, stowage, carriage, handling and unloading of the package, overpack or freight container including any special stowage provisions for the safe dissipation of heat (see 7;2.9.3.2), or a statement that no such requirements are necessary;
- b) Restrictions on the type of aircraft and any necessary routing instructions;
- c) Emergency arrangements appropriate to the consignment.

4.1.5.7.3 In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, the UN number and proper shipping name required in 4.1.4.1 must be in accordance with the certificate of the country of origin of design.

4.1.5.7.3~~4~~The applicable competent authority certificates need not necessarily accompany the consignment. The consignor must make them available.

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4.1.5.8.3 When self-reactive substances of Division 4.1, or organic peroxides of division 5.2 or other substances having similar properties, are offered for transport, the shipper must indicate on the dangerous goods transport document that the packages containing such substances must be protected from direct ~~sunshine~~ sunlight and all sources of heat ~~stored in a cool~~ and be placed in well adequately ventilated areas~~place, away from all sources of heat.~~

Secretarial Note.— DGP-WG/05-WP/14